IN THE CLAIMS:

Please cancel Claims 70, 80, 87, 96-99, 104-106, 142, 143 and 146 without prejudice or disclaimer of the subject matter recited therein.

Please amend Claims 4, 5, 71-73, 78, 88- 90, 120 and 131 as follows.

1. (Previously Presented) An apparatus for generating characterization data characterizing features in an image comprising:

an image data receiver for receiving data representative of an image;

a feature detector for detecting the presence of features represented by image data received by said image data receiver, said feature detector being arranged to determine, for image data representative of a plurality of different sized regions of an image, values representative of the presence of features in the regions; and

an image point characterizer for characterizing image points selected as being representative of features in the image data on the basis of the detection by said feature detector, by calculating characterization values for the features, wherein the characterization values are determined utilizing image data for regions of the image including the feature, and wherein said image point characterizer is arranged to determine said characterization values on the basis of image data for different sized regions, the size of the region being selected on the basis of the size of a said region utilized to detect the feature by said feature detector.

2. (Previously Presented) Apparatus in accordance with claim 1, wherein said apparatus is arranged to associate with each of the plurality of different sized regions for

determination of the presence of features, a size of region to be utilized to determine characterization values for features detected utilizing the different sized regions.

3. (Previously Presented) Apparatus according to claim 1, wherein said image point characterizer is arranged to select the size of region to be used to calculate the characterization values for a feature from a plurality of predetermined sizes, the selected size increasing as the size of the region used by the feature detector to detect the feature increases.

4. (Currently Amended) Apparatus ~~in accordance with any of~~ according to claim 1, wherein said feature characterizer is arranged to characterize each said region in a manner which is substantially independent of transformations resulting in linear distortions of the portion of the image including that region.

5. (Currently Amended) Apparatus ~~in accordance with any of~~ according to claim 1, wherein said feature characterizer is arranged to characterize each said region in a manner which is substantially independent of rotational transformations of the portion of the image including that region.

6. (Previously Presented) Apparatus in accordance with claim 5, wherein said feature characterizer is arranged to utilize a substantially circular region to characterize a feature wherein the size of the circular region is selected on the basis of the size of the feature detected by said feature detector.

7. (Previously Presented) Apparatus in accordance with claim 1, further comprising a correspondence identifier for identifying the correspondence between features in a pair of images, wherein said correspondence identifier is arranged to determine a match between features in the pair of images characterized by said feature characterizer.

8. (Previously Presented) Apparatus in accordance with claim 1, further comprising:

a data store for storing characterization values for features in a plurality of images; and

a correspondence identifier, said correspondence identifier being arranged to determine a match between characterization values determined by said feature characterizer for data representative of an image received by said image data receiver and stored characterization values stored in said data store.

9. (Previously Presented) An apparatus for generating a three-dimensional model of an object comprising:

apparatus for identifying a correspondence between features in pairs of images in accordance with claim 7;

a viewpoint determinator for determining on the basis of correspondence of features in pairs of images the relative positions from which the images have been obtained; and

a model generator for generating a three-dimensional model of an object utilizing the image data received by said image data receiver and the relative positions determined by said viewpoint determinator.

10. (Previously Presented) In an apparatus for generating a three-dimensional computer model of an object by processing images of the object taken from a plurality of different viewpoints to match features in the images, calculating the viewpoints at which the images were recorded using the matched features, and generating a three-dimensional computer model of the surface object using the calculated viewpoints, an improvement comprising matching features in the images by:

storing image data;

detecting the presence of features in the images represented by stored image data utilizing a plurality of different sized regions of the images to determine values representative of the presence of features in the image data;

characterizing image points selected as being representative of features in the image data on the basis of the values, utilizing different sized regions of the images for the image points wherein the size of a region used to characterize an image point is selected on the basis of the size of the region utilized to determine a value representative of the presence of features in the image data for the image point, and

matching the features utilizing the characterizations.

11. (Previously Presented) In an apparatus for processing data defining images of an object to generate a three-dimensional computer model of the object by matching features in the images, calculating the viewpoints at which the images were recorded using the matched features, and generating a three-dimensional computer model of the surface of the object using the calculated viewpoints, a method of performing the processing to match the features in the images comprising:

storing image data;

detecting the presence of features in the images represented by stored image data utilizing a plurality of different sized regions of the images to determine values representative of the presence of features in the image data;

characterizing image points selected as being representative of features in the image data on the basis of the values, utilizing different sized regions of the images for said image points wherein the size of a region used to characterize an image point is selected on the basis of the size of the region utilized to determine a value representative of the presence of features in the image data for the image point; and

matching the features utilizing the characterizations.

12. (Previously Presented) A method of generating characterization data characterizing features in an image comprising the steps of:

receiving image data;

detecting the presence of features represented by received image data by determining for image data representative of a plurality of different sized regions of the image, values representative of the presence of features in the regions; and

characterizing image points selected as being representative of features in the image data on the basis of said detection by calculating characterization values for the features, wherein the characterization values are determined utilizing image data for regions of the image centered on the features, and wherein the size of a said region for generating characterization data is selected on the basis of the size of said region utilized to detect said feature.

13. (Previously Presented) A method in accordance with claim 12, further comprising the steps of:

storing a plurality of sizes of regions for calculating characterization values; and

selecting from the stored sizes the size of regions for calculating characterization values for a feature, wherein the size selected increases as the size of the region used to detect that feature increases.

14. (Previously Presented) A method in accordance with claim 12, wherein said characterization step comprises generating characterization values which characterize each said region in a manner which is substantially independent of transformations resulting in linear distortions of the portion of the image including said region.

15. (Previously Presented) A method in accordance with claim 14, wherein said characterization step comprises generating characterization values which characterize each said region in a manner which is substantially independent of rotational transformations of the portion of the image in that region.

16. (Previously Presented) A method in accordance with claim 15, wherein said characterization step is performed utilizing a substantially circular region to generate characterization values to characterize a feature, and wherein the size of the circular region is selected on the basis of the size of the feature detected in said detection step.

17. (Previously Presented) A method of identifying the correspondence between features in a pair of images, comprising generating characterization data in accordance with claim 12; and

determining a match between features in the pair of images characterized in said characterization step.

18. (Original) A method in accordance with claim 17, further comprising the step of generating a signal conveying information defining identified correspondences.

19. (Previously Presented) A method in accordance with claim 18, further comprising the step of recording the signal on a recording medium either directly or indirectly.

20. (Previously Presented) A method of generating three-dimensional models from images of objects taken from different viewpoints comprising:

identifying the correspondence between features in images in accordance with claim 17;

determining the relative positions from which said images were obtained on the basis of the correspondence; and

generating a three-dimensional model of an object on the basis of the image data and the relative positions.

Claims 21-68. (Cancelled).

69. (Previously Presented) In a method for generating a three-dimensional computer model of an object by processing images of the object taken from a plurality of different viewpoints to match features in the images, calculating the viewpoints at which the images were recorded using the matched features, and generating a three-dimensional computer model of the surface object using the calculated viewpoints, an improvement comprising matching features in the images by:

storing image data;

detecting the presence of features in the images represented by stored image data utilizing a plurality of different sized regions of the images to determine values representative of the presence of features in the image data;

characterizing image points selected as being representative of features in the image data on the basis of the values, utilizing different sized regions of the images for the image points wherein the size of a region used to characterize an image point is selected on the basis of the size of the region utilized to determine a value representative of the presence of features in the image data for the image point; and

matching the features utilizing the characterizations.

Claim 70. (Cancelled).

71. (Currently Amended) Apparatus for generating characterization data characterizing an image comprising: ~~in accordance with claim 72,~~

a data receiver for receiving image data representative of an image;

a feature detector for detecting a plurality of features in an image represented by image data received by said data receiver; and

a feature characterizer for characterizing features detected by said feature detector, said feature characterizer being arranged to characterize portions of image data representative of regions of an image including features detected by said feature detector, wherein said feature characterizer is arranged to generate characterization data for a said region of an image such that the characterization is substantially unaffected by distortions of that region causing stretch and skew,

wherein said feature detector is arranged to detect a plurality of different sizes of features, and wherein said feature characterizer is arranged to use the size of a feature detected by said feature detector to select the size of a said region used to generate characterization data for a said feature.

72. (Currently Amended) Apparatus for generating characterization data characterizing an image comprising: ~~in accordance with claim 70,~~

a data receiver for receiving image data representative of an image;

a feature detector for detecting a plurality of features in an image represented by image data received by said data receiver; and

a feature characterizer for characterizing features detected by said feature detector, said feature characterizer being arranged to characterize portions of image data representative of regions of an image including features detected by said feature detector, wherein said feature characterizer is arranged to generate characterization data for a said region

of an image such that the characterization is substantially unaffected by distortions of that region causing stretch and skew,

wherein said feature characterizer is arranged to determine the shape of a region to be used to generate characterization data for a feature on the basis of values of image data for a region of the image including that feature so that the characterization is substantially unaffected by distortions causing stretch and skew of that region of the image.

73. (Previously Presented) Apparatus for generating characterization data characterizing an image comprising: ~~in accordance with claim 70,~~

a data receiver for receiving image data representative of an image;

a feature detector for detecting a plurality of features in an image represented by image data received by said data receiver; and

a feature characterizer for characterizing features detected by said feature detector, said feature characterizer being arranged to characterize portions of image data representative of regions of an image including features detected by said feature detector, wherein said feature characterizer is arranged to generate characterization data for a said region of an image such that the characterization is substantially unaffected by distortions of that region causing stretch and skew,

wherein said feature characterizer comprises:

a luminance determinator for determining the rate of change of luminance along two axes for a said region of the image;

an image transformer for determining a transformed image utilizing the rates of change of luminance determined by said luminance detector; and

a characterization generator for generating characterization data characterizing a said region of the image utilizing the transformed image.

74. (Previously Presented) Apparatus in accordance with claim 72, wherein said data receiver is arranged to receive image data representative of pixels within a said image, and said characterization data generator comprises:

an average second moment matrix determinator for determining for a said region an averaged second moment matrix for a feature, wherein the averaged second moment matrix comprises a scaled sum of second moment matrices for each pixel in that region, and the second moment matrix for each of the pixels comprises:

$$M=\begin{pmatrix} I_x^{\,2} & I_xI_y \\ I_xI_y & I_y^{\,2} \end{pmatrix}$$

where I_x and I_y are values indicative of the rate of change of luminance of an image along two different axes; and

a transformed region determinator for determining for a said region of the image including a said feature a transformed image for that region transformed to account for distortions arising from stretch and skew on the basis of the averaged second moment matrix determined for that region by said average second moment matrix determinator, said characterization data generator being arranged to calculate characterization values for a said feature on the basis of the calculation of rotational invariants determined for a transformed image for that region including the feature transformed by said transformed region determinator.

75. (Previously Presented) Apparatus in accordance with claim 74, wherein said transformed region determinator is arranged to determine a transformed image by interpolating values for an inverse square root of a second moment matrix determined by said average second moment matrix determinator for that region to determine a transformed image representative of the region of the original image transformed by the square root of the second moment matrix multiplied by a scaling factor.

76. (Previously Presented) Apparatus in accordance with claim 75, wherein the scaling factor is inversely proportional to the square root of the determinant of the averaged second moment matrix for a said region.

77. (Previously Presented) Apparatus in accordance with claim 76, wherein said transformed region determinator is arranged to generate transformed image data for a said region of the image until the calculated second moment matrix determined by said second moment matrix determinator for the transformed image is equal to identity, and wherein said feature characterizer is arranged to characterize a said feature on the basis of the iteratively transformed image data.

78. (Currently Amended) Apparatus in accordance with claim ~~70~~ 71, further comprising a feature associater for identifying matches between features in pairs of images, wherein said feature associator is arranged to determine a match between features in pairs of images on the basis of characterization by said feature characterizer of features in the pair of images.

79. (Previously Presented) Apparatus in accordance with claim 78, further comprising:

a data store for storing characterization data for features in a plurality of images; and

a feature associator, said feature associator being arranged to determine, utilizing the characterization of features of received image data characterized by said feature characterizer, a match between features in the received image data and features defined by characterization values stored in said data store.

Claims 80-87. (Cancelled).

88. (Currently Amended) A method for generating characterization data characterizing an image comprising the steps of: ~~in accordance with claim 87,~~

receiving image data representative of an image;

detecting a plurality of features in the image; and

generating characterization data, characterizing the features, by generating data characterizing portions of the image data representative of regions of images including the features, wherein said generation step is such that the characterization data generated is substantially unaffected by distortions of the regions including the features causing stretch and skew,

wherein said determination step comprises detecting a plurality of different sized features, and wherein said characterization step includes selecting the size of a region to characterize a said feature on the basis of the size of a said feature.

89. (Currently Amended) A method in accordance with claim ~~87~~ 88, wherein said generation step comprises for each of the features determining the shape of a region to be used to characterize a said feature on the basis of values of image data for a region of the image including that feature so that said characterization is substantially unaffected by transformations resulting in linear distortions of the region of the image.

90. (Currently Amended) A method in accordance with claim ~~87~~ 88, wherein said generation step comprises the steps of:

determining the rate of change of luminance along two axes for said regions of the images;

determining transformed images utilizing the rates of change of luminance; and

generating characterization data for the features utilizing the transformed images.

91. (Previously Presented) A method in accordance with claim 89, wherein said characterization step comprises the steps of:

determining for a said region of an image including a feature an averaged second moment matrix for the feature, wherein the averaged second moment matrix comprises a scaled sum of second moment matrices for each pixel in that region, and the second moment matrix for each of the pixels comprises:

$$M=\begin{pmatrix} I_x^2 & I_xI_y \\ I_xI_y & I_y^2 \end{pmatrix}$$

where I_x and I_y are values indicative of the rate of change of luminance of an image along two different axes; and

determining for that region of the image including the feature a transformed image transformed to account for distortions arising from sketch and skew on the basis of the second moment matrix determined for that region; and

calculating characterization values for a feature on the basis of the calculation of rotational invariants determined for the transformed image.

92. (Previously Presented) A method in accordance with claim 91, wherein the determination of a transformed image comprises determining a transformed image corresponding to the selected region transformed by the square root of the second moment matrix for that region scaled by a scaling factor.

93. (Previously Presented) A method in accordance with claim 92, wherein the scaling factor is proportional to the square root of the determinant of the second moment matrix determined for that region.

94. (Previously Presented) A method in accordance with claim 93, wherein the determination of a transformed image comprises determining a transformed image by interpolating values for the origins of pixels in the transformed image transformed by the inverse square root of the second moment matrix multiplied by a scaling factor, to determine a transformed image representative of the original image region transformed by the square root of

the second moment matrix multiplied by a scaling factor, wherein the scaling factor is inversely proportional to the determinant of the second moment matrix for a said feature.

95. (Previously Presented) A method in accordance with claim 94, wherein said transformation step comprises iteratively generating transformed image data for a said region of the image until the calculated second moment matrix for the transformed image is substantially equal to identity, and said characterization comprises characterizing the feature on the basis of the iteratively transformed image data.

Claims 96-106. (Cancelled).

107. (Previously Presented) An apparatus for identifying features in images comprising:

an image receiver for receiving data representative of an image;

a feature detector for detecting the presence of features in the image represented by image data received by said image receiver, said feature detector being arranged to determine, for image data representative of a plurality of different sized regions of the image, values representative of the presence of features in the regions; and

a selector for selecting image points as being representative of features in the image data on the basis of said detection by said feature detector,

wherein said feature detector is arranged to scale the values indicative of the presence of a feature in an image to account for variation in the values arising due to the size of the region used to determine the values.

108. (Previously Presented) An apparatus in accordance with claim 107, wherein said feature detector is arranged to scale the values by changing each of the values utilizing scaling factors proportional to the areas of regions used to determine the values.

109. (Previously Presented) An apparatus in accordance with claim 108, wherein said feature detector is arranged to scale the values by dividing each of the values by the scaling factors.

110. (Previously Presented) An apparatus in accordance with claim 107, wherein said selector is arranged to select points as being representative of features within images on the basis of the scaled values generated by said feature detector which exceed a predetermined threshold.

111. (Previously Presented) Apparatus in accordance with claim 107, wherein said selector is arranged to select a predetermined number of image points as being representative of features by comparing scaled values determined by said feature detector and selecting points being associated with values most strongly indicative of the presence of features.

112. (Previously Presented) Apparatus in accordance with claim 107, wherein said feature detector is arranged to determine the value for a region utilizing an averaged value indicative of the presence of a feature in an image calculated for a said region of the image, and to scale the determined value.

113. (Previously Presented) An apparatus in accordance with claim 112, wherein said feature detector is arranged to, for each of the plurality of different sized regions:

(a) determine a smoothed image wherein each of the values for pixels in the smoothed image are determined on the basis of an averaged value for pixels in that region in the original image;

(b) to determine characterization values for each of the pixels in the smoothed image indicative of the presence of a feature in that region; and

(c) to determine from pixels in the smoothed image a value indicative of an averaged characterization value for a region of the smoothed image, the size of the smoothed image region being proportional to the size of the region used to generate the smoothed image.

114. (Previously Presented) Apparatus in accordance with claim 113, wherein the characterization values comprise values indicative of the rate of change of luminance of pixels in the smoothed image.

115. (Previously Presented) Apparatus in accordance with claim 114, wherein said feature detector is arranged to generate the values indicative of the presence of a said feature by calculating values for Harris corner strengths for the points, divided by a scaling factor proportional to the square of the area of the region of image used to determine the Harris corner strengths.

116. (Previously Presented) Apparatus in accordance with claim 107, further comprising a feature characterizer for characterizing image points selected by said

selector, said feature characterizer being arranged to characterize a selected image point on the basis of image data representative of a region of the image including the selected image point.

117. (Previously Presented) Apparatus in accordance with claim 116, wherein said feature characterizer is arranged to vary the size of a said region for characterizing an image point so that the size of said region is proportional to the size of the region utilized by the feature detector to determine a value which resulted in the selection by said selector of the image point, included in said region.

118. (Previously Presented) Apparatus in accordance with claim 117, wherein said feature characterizer is arranged to said characterize the region in a manner which is substantially independent of affine transformations of the image data of the region.

119. (Previously Presented) Apparatus in accordance with claim 116, further comprising a match identifier for identifying matches between features in a pair of images, wherein said match identifier is arranged to determine a match between image points in the pair of images characterized by said feature characterizer.

120. (Currently Amended) Apparatus in accordance with claim 118, further comprising a data store for storing characterization values associated with image points in a plurality of images, and a match identifier, said match identifier being arranged to determine on the basis of characterization of features by said feature ~~characteriser~~ characterizer matches between image

points in the image data received by said image receiver and image points associated with characterization values stored in said data store.

121. (Previously Presented) An apparatus for generating a three-dimensional computer model of an object comprising:

apparatus for identifying matches between features in pairs of images in accordance with claim 119;

a viewpoint determinator for determining on the basis of the matches the relative view points from which the images have been obtained; and

a model generator for generating a three-dimensional computer model of an object utilizing the image data received by said image receiver and the determination of the relative view points from which the image data has been obtained determined by said viewpoint determinator.

122. (Previously Presented) In an apparatus for generating a three-dimensional computer model of an object by processing images of the object taken from a plurality of different viewpoints to match features in the images, calculating the viewpoints at which the images were recorded using the matched features, and generating a three-dimensional computer model of the surface object using the calculated viewpoints, an improvement comprising matching features in the images by:

storing image data;

detecting the presence of features in the images represented by the stored data, by determining, for image data representative of a plurality of different sized regions of a given image from among the images, values representative of the presence of features in the regions, and scaling the values to account for variation in the values arising due to the size of the region used to determine the values; and

selecting image points as being representative of features in the image data on the basis of the scaled values.

123. (Previously Presented) In an apparatus for processing data defining images of an object to generate a three-dimensional computer model of the object by matching features in the images, calculating the viewpoints at which the images were recorded using the matched features, and generating a three-dimensional computer model of the surface of the object using the calculated viewpoints, a method of performing the processing to match the features in the images comprising:

storing image data;

detecting the presence of features in the images represented by stored image data, comprising determining for image data representative of a plurality of different sized regions of a given image from among the images, values representative of the presence of features in the regions, and scaling the values to account for variation in the values arising due to the size of the region used to determine the values; and

selecting image points as being representative of features in the image data on the basis of the scaled values.

124. (Previously Presented) A method for identifying features in images comprising the steps of:

storing image data;

detecting the presence of features in images represented by stored image data, said detection step comprising determining for image data representative of a plurality of different sized regions of a given image from among the images, values representative of the presence of features in the regions; and

selecting image points as being representative of features in the image data on the basis of said detection step, wherein said detection step includes the step of scaling the values indicative of the presence of a feature in an image to account for variation in the values arising due to the size of the region used to determine the values.

125. (Previously Presented) A method in accordance with claim 124, wherein said scaling step comprises changing each of the values utilizing scaling factors proportional to the areas of the regions used to determine the values.

126. (Previously Presented) A method in accordance with claim 125, wherein said scaling step comprises scaling the values by dividing each of the values by the scaling factors.

127. (Previously Presented) A method in accordance with claim 124 wherein said selection step comprises selecting image points as being representative of features

on the basis of the scaled values determined for a region including a said point exceeding a predetermined threshold.

128. (Original) A method in accordance with claim 124, wherein said selection step comprises selecting a predetermined number of image points as being representative of features by comparing scaled values determined for regions and selecting points associated with values most strongly indicative of the presence of features.

129. (Previously Presented) A method in accordance with claim 124, wherein said detection step comprises determining the value for a region utilizing an averaged value indicative of the presence of a feature in an image calculated for a said region of the given image, and scaling the determined value.

130. (Previously Presented) A method in accordance with claim 129, wherein said detection step comprises, for each of the plurality of different sized regions;

(a) determining a smoothed image wherein each of the values for pixels in the smoothed image are determined on the basis of an averaged value for pixels in that region in the original image;

(b) determining characterization values for each of the pixels in the smoothed image indicative of the presence of a feature in that region; and

(c) determining from pixels in the smoothed image a value indicative of an averaged characterization value for a region of the smoothed image, the size of the smoothed image region being proportional to the size of the region used to generate the smoothed image.

131. (Currently Amended) A method in accordance with claim 130, wherein said ~~characterisation~~ characterization values comprise values indicative of the rate of change of luminance of pixels in the smoothed image.

132. (Previously Presented) A method in accordance with claim 131, wherein said detection step includes generating values indicative of the presence of a said feature by calculating values for Harris corner strengths for the points, divided by a scaling factor proportional to the square of the area of the region of image used to determine the Harris corner strength.

133. (Previously Presented) A method of characterizing features in images comprising the steps of selecting image points in accordance with claim 124, and characterizing features, on the basis of image data representative of regions of the image including the image points.

134. (Previously Presented) A method in accordance with claim 133, wherein said characterization step comprises selecting the size of a said region for characterizing a feature so that the size of a region for characterizing a feature is proportional to the size of the region utilized to determine a value utilized to select the image point, included in that region.

135. (Previously Presented) A method in accordance with claim 124, wherein said characterization step comprises characterizing that region in a manner which is substantially independent of affine transformations of the image data of that region.

136. (Previously Presented) A method of identifying the correspondence between features in pairs of images comprising the steps of:

characterizing features in images in accordance with claim 133; and

identifying correspondence between features in a pair of images on the basis of the characterization in said characterization step.

137. (Previously Presented) A method in accordance with claim 136, further comprising the step of generating a signal conveying information defining identified correspondences.

138. (Previously Presented) A method in accordance with claim 137, further comprising the step of recording the generated signal on a recording medium either directly or indirectly.

139. (Previously Presented) A method of selecting an image from a database of images comprising the steps of:

storing characterization values for features in a plurality of images stored in a database;

characterizing an image in accordance with claim 133; and

selecting an image from an image database on the basis of a comparison of the characterization of that image and the stored characterization values for features in images in the image database.

140. (Previously Presented) A method of generating a three-dimensional model of an object comprising the steps of:

identifying a correspondence between features in pairs of images in accordance with claim 136;

determining on the basis of the correspondence of features in a pair of images the relative view points from which the images have been obtained; and

generating a three-dimensional model of an object utilizing the image data and the determination of the relative view points from which the image data has been obtained.

141. (Previously Presented) In a method of generating a three-dimensional computer model of an object by processing images of the object taken from a plurality of different viewpoints to match features in the images, calculating the viewpoints at which the images were recorded using the matched features, and generating a three-dimensional computer model of the surface object using the calculated viewpoints, an improvement comprising matching features in the images by:

storing image data;

detecting the presence of features in the images represented by stored image data, comprising determining for image data representative of a plurality of different sized regions of a given image from among the images, values representative of the presence of features in the regions, and scaling the values to account for variation in the values arising due to the size of the region used to determine the values; and

selecting image points as being representative of features in the image data on the basis of the scaled values.

Claims 142 and 143. (Cancelled).

144. (Previously Presented) An apparatus for generating characterization data characterizing features in an image comprising:

input means for receiving data representative of an image;

detection means for detecting the presence of features represented by image data received by said input means, said detection means being arranged to determine, for image data representative of a plurality of different sized regions of the image, values representative of the presence of features in the regions; and

characterization means for characterizing image points selected as being representative of features in the image data on the basis of the detection by said detection means, by calculating characterization values for the features, wherein the characterization values are determined utilizing image data for regions of the image including the feature, and wherein said characterization means is arranged to determine the characterization values on the basis of image data for different sized regions, the size of a given region being selected on the basis of the size of a said region utilized to detect the feature by said detection means.

Claims 145-148. (Cancelled).